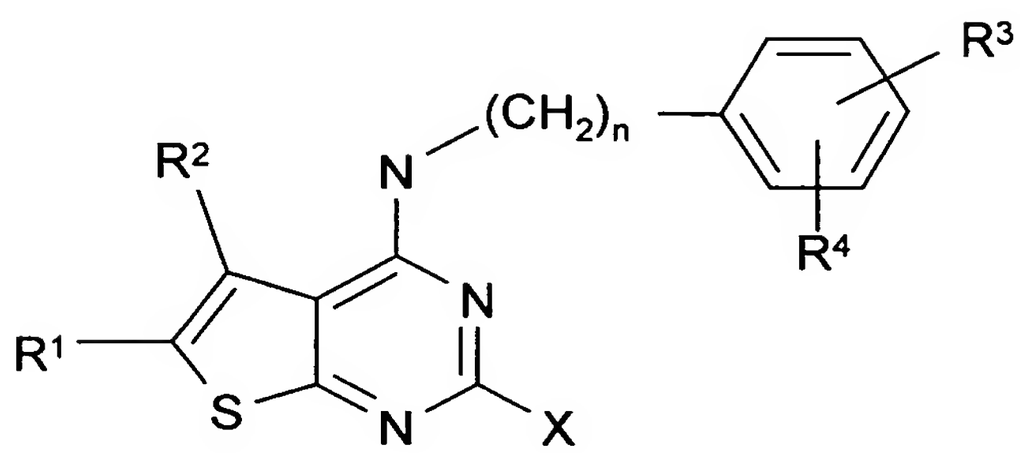
Patent Claims

1. Use of compounds of the formula I



I

in which

R^1, R^2	each, independently of one another, denote H, A, OA, alkenyl, alkynyl, NO_2, CF_3 or Hal,
R^1 and R^2	together also denote alkylene having 3-5 C atoms,
R^3, R^4	each, independently of one another, denote H, A, OA, OH, Hal, NO_2, NH_2, NHA or NAA',
R^3 and R^4	together also denote -O-CH_2-CH_2-, -O-CH_2-O- or -O-CH_2-CH_2-O-,
A, A'	each, independently of one another, denote alkyl having 1 to 6 C atoms, where 1-5 H atoms may also be replaced by F and/or chlorine,
X	denotes an usaturated 5-7-membered heterocycle having 1-4 N, O and/or S atoms, bonded via N or C, which is unsubstituted or mono-, di- or trisubstituted by A, Hal or CF_3, or morpholinyl, 4-Y-piperidin-1-yl or 4-Y-piperazin-1-yl,
Y	denotes H, A, OH, -CH_2OH or -CH_2CH_2OH,
Hal	denotes F, Cl, Br or I
and	
n	denotes 0, 1, 2 or 3,

and pharmaceutically usable derivatives, solvates, salts and stereoisomers thereof, including mixtures thereof in all ratios,
for the preparation of a medicament for the treatment of diseases in which the inhibition, regulation and/or modulation of kinase signal transduction plays a role.

2. Use according to Claim 1 of compounds of the formula I
in which

X		denotes morpholinyl, 4-y-piperidin-1-yl, 4-Y-piperazin-1-yl, 1-, 2-, 4- or 5-imidazolyl, 2-methyl-1-imidazol-1-yl, 1-, 3-, 4- or 5-pyrazolyl, 2-, 3- or 4-pyridyl, 2-, 4-, 5- or 6-pyrimidinyl, 1,2,3-triazol-1-, -4- or -5-yl, 1,2,4-triazol-1-, -3- or 5-yl, 3- or 4-pyridazinyl or pyrazinyl,
R^1, R^2		each, independently of one another, denote H, Hal or A,
R^1 and R^2		together denote alkylene having 3-5 C atoms,
R^3, R^4		each, independently of one another, denote H, OA, OH or Hal,
R^3 and R^4		together denote -O-CH_2-CH_2-, -O-CH_2-O- or -O-CH_2-CH_2-O,
Y		denotes H, A, OH, -CH_2OH or -CH_2CH_2OH,

and pharmaceutically usable derivatives, solvates, salts and stereoisomers thereof, including mixtures thereof in all ratios.

3. Use according to Claim 1 of compounds selected from the group
(a) 2-(1-imidazolyl)-6-methyl-4-(3,4-methylenedioxybenzylamino)thieno[2,3-d]pyrimidine;
(b) 2-(1-imidazolyl)-5,6-dimethyl-4-(3,4-methylenedioxybenzylamino)thieno[2,3-d]pyrimidine;

(c) 2-(1-imidazolyl)-4-(3,4-methylenedioxybenzylamino)-5,6,7,8-tetrahydro-[1]-benzylthieno[2,3-d]pyrimidine;

(d) 2-(1-imidazolyl)-5-chloro-4-(3,4-methylenedioxybenzyl-amino)thieno[2,3-d]pyrimidine;

(e) 2-(1-imidazolyl)-6-chloro-4-(3,4-methylenedioxybenzyl-amino)thieno[2,3-d]pyrimidine;

(f) 2-(1,2,4-triazol-1-yl)-4-(3,4-methylenedioxybenzylamino)-5,6,7,8-tetrahydro-[1]-benzylthieno[2,3-d]pyrimidine;

(g) 2-(pyrazol-1-yl)-4-(3,4-methylenedioxybenzylamino)-5,6,7,8-tetrahydro-[1]-benzylthieno[2,3-d]pyrimidine;

(h) 2-(pyridin-3-yl)-4-(3,4-methylenedioxybenzylamino)-5,6,7,8-tetrahydro-[1]-benzylthieno[2,3-d]pyrimidine,

(i) 2-(morpholin-4-yl)-4-(3,4-methylenedioxybenzylamino)-5,6,7,8-tetrahydro-[1]-benzylthieno[2,3-d]pyrimidine,

(j) 2-(morpholin-4-yl)-4-(3,4-methylenedioxybenzylamino)-5,6-di-methylthieno[2,3-d]pyrimidine,

and pharmaceutically usable derivatives, solvates, salts and stereo-isomers thereof, including mixtures thereof in all ratios.

4. Use according to Claim 1, 2 or 3, where the kinases are selected from the group of the tyrosine kinases and Raf kinases.

5. Use according to Claim 4, where the tyrosine kinases are TIE-2, VEGFR, PDGFR, FGFR and/or FLT/KDR.

6. Use according to Claim 4 of compounds according to Claim 1, and pharmaceutically usable derivatives, solvates and stereoisomers thereof, including mixtures thereof in all ratios,
for the preparation of a medicament for the treatment of diseases which are influenced by inhibition of tyrosine kinases by the com-pounds according to Claim 1.

7. Use according to Claim 6 for the preparation of a medicament for the treatment of diseases which are influenced by inhibition of TIE-2, VEGFR, PDGFR, FGFR and/or FLT/KDR by the compounds according to Claim 1.

8. Use according to Claim 6 or 7, where the disease to be treated is a solid tumour.

9. Use according to Claim 8, where the solid tumour originates from the group of the tumours of the squamous epithelium, the bladder, the stomach, the kidneys, of head and neck, the oesophagus, the cervix, the thyroid, the intestine, the liver, the brain, the prostate, the urogenital tract, the lymphatic system, the stomach, the larynx and/or the lung.

10. Use according to Claim 8, where the solid tumour originates from the group of monocytic leukaemia, lung adenocarcinoma, small-cell lung carcinomas, pancreatic cancer, glioblastomas and breast carcinoma.

11. Use according to Claim 8, where the solid tumour originates from the group of lung adenocarcinoma, small-cell lung carcinomas, pancreatic cancer, glioblastomas, colon carcinoma and breast carcinoma.

12. Use according to Claim 6 or 7, where the disease to be treated is a tumour of the blood and immune system.

13. Use according to Claim 12, where the tumour originates from the group of acute myelotic leukaemia, chronic myelotic leukaemia, acute lymphatic leukaemia and/or chronic lymphatic leukaemia.

14. Use according to Claim 6 or 7 for the treatment of a disease in which angiogenesis is implicated.

15. Use according to Claim 14, where the disease is an ocular disease.

16. Use according to Claim 6 or 7 for the treatment of retinal vascularisation, diabetic retinopathy, age-induced macular degeneration and/or inflammatory diseases.

17. Use according to Claim 16, where the inflammatory disease originates from the group rheumatoid arthritis, psoriasis, contact dermatitis and delayed hypersensitivity reaction.

18. Use according to Claim 6 or 7 for the treatment of bone pathologies, where the bone pathology originates from the group osteosarcoma, osteoarthritis and rickets.

19. Use of compounds of the formula I according to Claim 1 and/or physiologically acceptable salts and solvates thereof for the preparation of a medicament for the treatment of solid tumours, where a therapeutically effective amount of a compound of the formula I is administered in combination with a compound from the group 1) an oestrogen receptor modulator, 2) an androgen receptor modulator, 3) a retinoid receptor modulator, 4) a cytotoxic agent, 5) an antiproliferative agent, 6) a prenyl-protein transferase inhibitor, 7) an HMG-CoA reductase inhibitor, 8) an HIV protease inhibitor, 9) a reverse transcriptase inhibitor and 10) another angiogenesis inhibitor.

20. Use of compounds of the formula I according to Claim 1 and/or physiologically acceptable salts and solvates thereof for the preparation of a medicament for the treatment of solid tumours, where a therapeutically effective amount of a compound of the formula I is

administered in combination with radiotherapy and a compound from the group 1) an oestrogen receptor modulator, 2) an androgen receptor modulator, 3) a retinoid receptor modulator, 4) a cytotoxic agent, 5) an antiproliferative agent, 6) a prenyl-protein transferase inhibitor, 7) an HMG-CoA reductase inhibitor, 8) an HIV protease inhibitor, 9) a reverse transcriptase inhibitor and 10) another angiogenesis inhibitor.

21. Use according to Claim 6 or 7 for the preparation of a medicament for the treatment of diseases which are based on disturbed TIE-2 activity,
where a therapeutically effective amount of a compound according to Claim 1 is administered in combination with a growth-factor receptor inhibitor.

22. Use according to Claim 1, 2, 3 or 4 of compounds of the formula I for the preparation of a medicament for the treatment of diseases which are caused, mediated and/or propagated by Raf kinases.

23. Use according to Claim 22, where the Raf kinase is selected from the group consisting of A-Raf, B-Raf and Raf-1.

24. Use according to Claim 22, where the diseases are selected from the group of hyperproliferative and non-hyperproliferative diseases.

25. Use according to Claim 22 or 24, where the disease is cancerous.

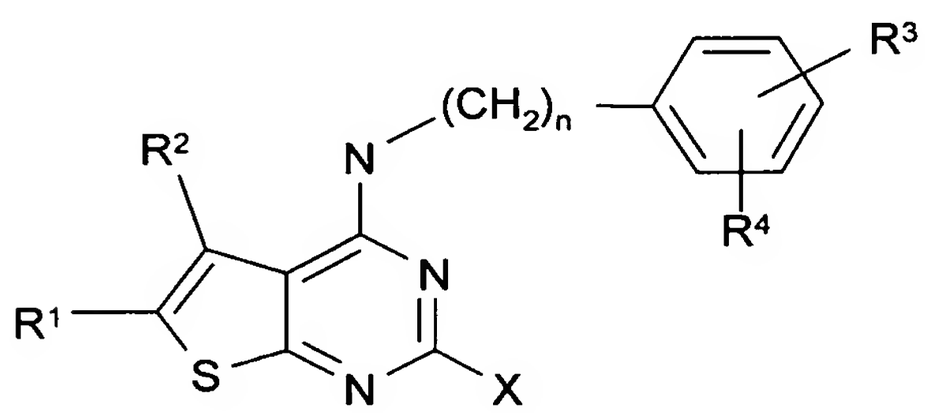
26. Use according to Claim 22 or 24, where the disease is non-cancerous.

27. Use according to Claim 22, 24 or 26, where the non-cancerous diseases are selected from the group consisting of psoriasis, arthritis,

inflammation, endometriosis, scarring, benign prostatic hyperplasia, immunological diseases, autoimmune diseases and immunodeficiency diseases.

28. Use according to one of Claims 22, 24 or 25, where the diseases are selected from the group consisting of brain cancer, lung cancer, squamous cell cancer, bladder cancer, gastric cancer, pancreatic cancer, hepatic cancer, renal cancer, colorectal cancer, breast cancer, head cancer, neck cancer, oesophageal cancer, gynaecological cancer, thyroid cancer, lymphoma, chronic leukaemia and acute leukaemia.

29. Compounds of the formula I



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A, A' each, independently of one another, denote alkyl having 1 to 6 C atoms, where 1-5 H atoms may also be replaced by F and/or chlorine,

X denotes morpholinyl, 4-Y-piperidin-1-yl or 4-Y-piperazin-1-yl,

Y denotes H, A, OH, $-CH_2OH$ or $-CH_2CH_2OH$,

Hal denotes F, Cl, Br or I

and

n denotes 0, 1, 2 or 3,

and pharmaceutically usable derivatives, solvates, salts and stereoisomers thereof, including mixtures thereof in all ratios.

30. Compounds according to Claim 29 in which

X denotes morpholinyl, 4-Y-piperidin-1-yl or 4-Y-piperazin-1-yl,

R^1, R^2 each, independently of one another, denote H, Hal or A,

R^1 and R^2 together denote alkylene having 3-5 C atoms,

R^3, R^4 each, independently of one another, denote H, OA, OH or Hal,

R^3 and R^4 together denote $-O-CH_2-CH_2-$, $-O-CH_2-O-$ or $-O-CH_2-CH_2-O$,

and pharmaceutically usable derivatives, solvates and stereoisomers thereof, including mixtures thereof in all ratios.

31. Medicaments comprising at least one compound of the formula I according to Claim 29 or 30 and/or pharmaceutically usable derivatives, solvates and stereoisomers thereof, including mixtures thereof in all ratios, and optionally excipients and/or adjuvants.